

Audit Sistem Tata Udara Dan Pencahayaan (Studi Kasus Pada Lantai 3 Gedung Jurusan Teknik Politeknik Negeri Jember). *Air Conditioning and Lighting System Audit (Case Study on the 3rd Floor of the Jember State Polytechnic Engineering Department Building).* Pembimbing: Dedy Eko Rahmanto, S.T.P., M.Si.

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ABSTRACT

Energy is the basic source of human life. Energy management is useful for increasing energy efficiency and reducing energy costs. One of them is conducting energy audit activities. An energy audit needs to be carried out on the air conditioning and lighting systems on the 3rd Floor of the Jember State Polytechnic Engineering Department Building. This study aims to determine the value of energy consumption intensity (IKE), the actual condition of the air conditioning and lighting systems, as well as the savings opportunities that can be taken. Energy consumption measurements are carried out every day for 1 week, the measurement results are converted to 1 month. The values for temperature, humidity, and lighting intensity values for each room are measured according to the measurement points that have been prepared according to the SNI for Measurement of Illumination Intensity in the Workplace. Air conditioning performance was measured by sampling 5 air conditioners in different spaces with the air psychometric approach to determine wet and dry bulb temperatures which can be used in determining other calculations. The results of the IKE scores were actually and theoretically analyzed. The values of the two categories stated that the IKE Floor 3 score was in the very efficient category. The temperature data for all rooms except the toilet are within the scope of SNI, but the average humidity is excessive. The sampling results for the AC performance values were within normal limits except for the AC in the Lecturer Room. There are 15 rooms that have not reached the minimum standard of lighting out of a total of 24 rooms. The recommended savings opportunities are routine maintenance such as washing the air conditioner, charging freon, adding natural lighting as needed, cleaning the outside of the lights, and if necessary, changing cloth curtains to vertical curtains.

Keywords: *Energy Audit, IKE, Savings Opportunities, Lighting, Air Conditioning.*